**3GPP TSG-SA5 Meeting #157 *S5-245674rev1***

Hyderabad, India, 14 - 18 October 2024

**Source: NTT DOCOMO**

**Title: pCR 28.869 VNF Configuration management ENs**

**Document for: Approval**

**Agenda Item: 6.19.6**

# 1 Decision/action requested

***In this box give a very clear / short /concise statement of what is wanted.***

# 2 References

1. 3GPP TR 28.869 v1.0.1 Study on cloud aspects of management and orchestration.

# 3 Rationale

The contribution proposes to add conclusions and recommendations.

# 4 Detailed proposal

It proposes to make the following changes to TR 28.869 [1].

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| **1st Change** |

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] ETSI GS NFV-IFA 049: “Network Functions Virtualisation (NFV) Release 5; Architectural Framework; VNF generic OAM functions specification.

[ref-cncf] PaaS-CNCF : https://www.cncf.io/blog/2021/06/16/simplifying-saas-paas-and-iaas/

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| **2nd Change** |

5.1.1.3.1 VNF Configuration Manager function

This solution introduces a platform entity that interacts with the 3GPP management system via a new reference point for performing the configuration management of cloud-native VNFs.

This solution proposes the use of the VNF Configuration Manager function defined in ETSI GS NFV-IFA 049 [2]. Some key functionalities supported by the VNF Configuration Manager function are the capability to convey configuration information to one or more VNF/VNFC instances, the capability to perform pre-configuration actions (e.g. create configuration backup) and post-configuration actions (e.g. rollback running configuration) and the capability to query configuration information of VNF/VNFC instances.

Configuration information includes virtualization-dependent configurations and virtualization-independent configurations.

From 3GPP management system perspective, MnS provisioning handles configuration of managed NFs defined by 3GPP, which include the necessary configuration related to the behaviour and role of a NF (e.g., configuration of a gNB CU UP function). This kind of configuration information is regarded to be "virtualization-independent". The 3GPP management system fully understands the semantics of this kind of configuration since it is needed to ensure that the 3GPP mobile network operates as intended by the network operator.

NOTE: The relationship of virtualization-independent configuration and MnS Provisioning when considering VNF Generic OAM functions will be investigated during the normative phase.

The VNF Configuration Manager does not understand the semantics of the configuration information that is conveyed to the VNF/VNFC instances.

Figure 5.1.1.3.1-1 depicts the interaction and reference point between 3GPP management system and the VNF Configuration Manager.



**Figure 5.1.1.3.1-1: Interaction and reference point between 3GPP management system and VNF Configuration Manager**

NOTE: As specified in ETSI GS NFV-IFA 049 [2], the VNF Configuration Manager is a VNF generic OAM function, while close mapping between VNF generic OAM functions and Platform as a Service (PaaS) Services exists. According to ETSI GS NFV-IFA 049 [2], any VNF generic OAM function can be understood as a PaaS Service of a specific type, i.e. a PaaS Service that provides and handles generic OAM functionality for VNFs. According to CNCF, PaaS is a framework for software development delivered over the internet.

Editor’s Note: add a reference for the definition of PaaS Services.The present solution addresses the potential requirements REQ-CVNF\_CM-1 and REQ-CVNF\_CM-2.

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| **3rd Change** |

5.1.1.4 Evaluation of solutions

The potential solutions support the capability to perform configuration management for cloud-native VNFs. They introduce corresponding PaaS reference points to enable communication between SBMA and related external platform entities. The new platform entities reside outside the 3GPP management system, and the solutions are compatible with the 3GPP management system framework. The main advantages of the documented solutions are:

- More granular management functions, as defined as PaaS Services, enable the split and tailoring of diverse scopes of configuration, such as between VNF configuration, network configuration and repository of configuration data.

- The PaaS Services, as part of the cloud-native platform over which the cloud-native VNF are deployed, provide means compatible with state-of-the-art cloud technologies which are now typically consumed for the software implementation of NFs.

The relationship of VNF Generic OAM functions and MnS Provisioning for cloud-native VNF configuration will be investigated during the normative phase.

Editor’s Note: to update the terminology used in this section upon consensus

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| **End of Changes** |